

II. Remarks

A. Status of the Claims

Claims 1-30 and 33-46 are canceled. Claim 31 is amended. Claims 47-55 are added. Claims 31, 32, and 47-55 are pending.

The priority paragraph has been amended to properly cite benefit of provisional application No. 60/514,313 filed 24 October 2003.

Support for language of Claim 31 is found in FIG. 10 and in FIG. 13C, for example. Support for language of added Claims 47-54 is present in Claims 31 and 32, for example. Support for language of added Claim 55 is found in Claim 31 from which it depends as well as Claim 22 of the parent PCT application PCT/US2004/034850.

Added claims are believed to fall under the elected invention since added claims are directly or indirectly dependent upon Claim 31.

No new matter has been added to the application by the amendments herein.

B. Rejection of Claim 31 under 35 U.S.C. §102(b/e)

Office Action

The Office Action states a rejection of Claim 31 as anticipated by Lugmair *et al.* U.S. Patent No. 6,755,364 (pins), U.S. Patent No. 1,864,542 Holzapfel (coneballs), U.S. Patent No. 2,847,169 Hartman (coneballs), and U.S. Patent No. 983,028 Davidsen (pins). Office Action page 2.

Response

Applicants traverse this rejection.

To anticipate a claim, each and every element of the claim must be found in a single prior art reference. MPEP § 2131.

Lugmair *et al.* refers to “grinding pins” at column 10, line 16, and to “crushing pins” 60 at columns 16 and 17. “Crushing pins” 60 in FIG. 3C of Lugmair *et al.* lack pointed ends as stated by the claims. Davidsen sets forth cylindrical bodies as grinding bodies. Therefore, Applicants submit that neither Lugmair *et al.* nor Davidsen sets forth expressly or inherently the apparatus or methods of Claim 31 since neither document provides for disrupting particles comprising pins having a pointed end.

Holzapfel states that grinding edge angles should not be too pointed (column 1, lines 26-28). In fact, Holzapfel states that opposite end sections of a grinding surface have the form of

truncated cones (col. 2, line 95; page 2, col. 1, line 41; and Claim 1). Therefore, Holzapfel does not provide for coneballs as disrupting particles and, in fact, teaches away from a cone shape. Hartman provides for a shape that conforms approximately with the interstice within a group of four balls symmetrically stacked. Such an interstice-filling shape contains concave depressions (col. 5, line 23). Therefore, Applicants submit that neither Holzapfel nor Hartman sets forth expressly or inherently the apparatus or methods of Claim 31 since neither document provides for disrupting particles comprising pins having a pointed end.

Applicants therefore respectfully request that the rejections of Claim 31 and claims dependent thereon, as anticipated by the cited references, be withdrawn.

C. Rejection of Claims 31-32 under 35 U.S.C. §103

Office Action

The Office Action states a rejection of Claim 31-32 as unpatentable over Tomes *et al.* in view of U.S. Patent No. 6,755,364 to Lugmair *et al.*, U.S. Patent No. 1,864,542 to Holzapfel, U.S. Patent No. 2,847,169 to Hartman, or U.S. Patent No. 983,028 to Davidsen. Office Action pages 2-3.

Response

Applicants traverse this rejection.

Applicants submit that Tomes *et al.* teach or suggest nothing regarding an apparatus comprising a ball mill including disrupting particles that are not substantially spherical and comprise screw-bits, cone balls, pins having a pointed end, or non-spherical shot. Further, Applicants submit that Tomes *et al.* teach or suggest nothing regarding a method comprising disrupting a biological sample in a ball mill loaded with said disrupting particles.

Lugmair *et al.* refers to “grinding pins” at column 10, line 16, and to “crushing pins” 60 at columns 16 and 17. “Crushing pins” 60 in FIG. 3C of Lugmair *et al.* lack pointed ends. Davidsen sets forth cylindrical bodies as grinding bodies. Holzapfel states that grinding edge angles should not be too pointed (column 1, lines 26-28). In fact, Holzapfel states that opposite end sections of a grinding surface have the form of truncated cones (col. 2, line 95; page 2, col. 1, line 41; and Claim 1). Therefore, Holzapfel does not provide for coneballs as disrupting particles and, in fact, teaches away from a cone shape. Hartman provides for a shape that conforms approximately with the interstice within a group of four balls symmetrically stacked. Such an interstice-filling shape contains concave depressions (col. 5, line 23).

Applicants submit that, even if combined, the combination of Tomes *et al.* in view of either Lugmair *et al.*, Holzapfel, Hartman, or Davidsen therefore fails to teach each element of the invention as set forth by Claim 31. An essential characteristic of a proper dependent claim is that it shall include every limitation of the claim from which it depends. Therefore, a dependent claim is allowable when the claim from which it depends is allowable. Applicants therefore respectfully request that the rejection of Claim 32 under 35 U.S.C. § 103(a) be withdrawn. Applicants further submit that newly added dependent claims are patentable for the same reason that Claim 32 is patentable.

D. Conclusion

Applicant believes that the foregoing remarks fully respond to all outstanding matters for this application. Reconsideration is respectfully requested.

Should there be any questions or comments regarding this document, the Examiner is invited to contact Applicants' representative, Gloria L. Norberg at 512-721-3654 for discussion.

Respectfully submitted,

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